with the Egyptians, their culture seems strangely alien, for it retained many features that had been extinct in Egypt for centuries, but now reappear strongly tainted with the effects of negro influence. After reading the masterly interpretation of these data relating to the first appearance of a distinctively Nubian culture in Lower Nubia, it is easy to understand how these puzzling facts have so far misled all other recent writers who have discussed Nubian archæology.

A very interesting feature of this report is the account of the superstructures that are found in association with these Middle Nubian graves, sometimes in the form of "a low dome of stonework (Fig. 94), composed of circular corbelled courses, somewhat analogous to the mud-brick corbel vaults of the Protodynastic period in Egypt" (p. 14), sometimes a simple cairn of stones roughly thrown together or more extensive circular walls of stone surrounding the grave, often with a little 'chapel' for offerings on the east or north-east side. As the derivation of these types of superstructure from known Protodynastic Egyptian forms is unquestioned, it is very instructive to note that precisely similar circular stone monuments (with offering chapels) have puzzled writers on Algerian archæology (see MacIver and Wilkin's "Libyan Notes," 1901, Chapter xii.), who have not hesitated to class them with the megalithic group of structures in that region.

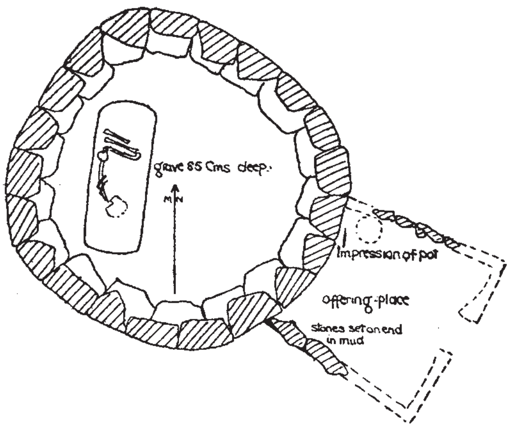

FIG. 2.—Cemetery 87. Grave 61. From "The Archæological Survey of Nubia. Report for 1908–9."

Limitation of space alone prevents a complete enumeration of all the other important features of these volumes. Further light is thrown upon the destruction of this characteristic Nubian culture, which flourished between the Sixth and Thirteenth Dynasties, by the Egyptian colonisation which followed the military expeditions of Usertesen III. And here, as elsewhere in Mr. Firth's report, it is clearly shown how the facts brought to light in these archæological investigations corroborate and supplement the known historical evidence.

There is now much more precise information concerning an interesting group of negroid people which made its appearance in Nubia between the second and sixth centuries A.D. They appear to be Nubas from Kordofan, perhaps the Nobadae brought into Nubia under Diocletian to check the incursions of the Blemmyes, who in turn were probably the nomadic kindred or descendants of the Middle Nubians who had taken to the Eastern Desert.

The interesting mud-brick forts at Koshtamna, built originally somewhere about the time the famous Giza Pyramids were being erected in Egypt, and frequently repaired and extended in subsequent ages, are fully and lucidly described. So also is the fortified Byzantine town of Sabagura.

There is also much new information concerning the Ptolemaic-Roman and Byzantine periods in Nubia.

The main part of the report consists of the detailed field notes, illustrated by numerous excellent woodcuts and a large volume of photographs and maps. This magnificent record of Prof. Reisner's and Mr. Firth's characteristically thorough survey of an extensive tract of difficult country will be indispensable to everyone who wants to understand the real history of the Nile Valley.

G. ELLIOT SMITH.

THE CRIMINAL AND THE CRIME.[1]

MR. GORING'S Blue Book on the English convict is unquestionably a product of immense patience and industry. In a preface contributed by Sir E. Ruggles-Brise, it is stated that, "In 1901 Dr. Griffiths, Deputy Medical Officer of Parkhurst Prison, formed the idea of subjecting a large number of prisoners convicted of certain similar offences to accurate measurements in order to ascertain whether these showed any deviation from what may be described as the normal, *i.e.* non-criminal persons." Under the encouragement of the Prison Commissioners, especially of Sir Bryan Donkin and Sir H. Smalley, and through the labours of several medical officers, the work grew in scope and magnitude. Ultimately it was placed in the hands of Dr. Goring, who was detached from duty with the view of tabulating the material at University College, with the assistance, and under the direction of Prof. Karl Pearson.

"It soon became apparent that the scope of the work had grown, perhaps inevitably, far beyond its original purpose, viz.: the refutation or confirmation, of the various theories that had been promulgated concerning the existence of the criminal type. It will be seen that the work now embraces a wide range, including not only an analysis of the physical and mental conditions of convicts, but also the data for speculation on very difficult and contentious questions as to the relative influence of heredity, environment, etc. Although the commissioners had not contemplated in the first instance a work of this magnitude, they feel it only fair to Dr. Goring that the work should be published on his own lines, and that the public should be in possession of the mass of information collated, and statistically tabulated by him, and of the conclusions he draws therefrom. It must also be explicitly understood that the commissioners are not in a position to endorse all the conclusions at which he arrives, or to criticise the method employed in attaining them, as any attempt in this direction would involve an elaborate discussion of matters on which the highest scientific authorities differ."

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[1] "The English Convict. A Statistical Study." By Dr. C. Goring Pp. 440. (London: His Majesty's Stationery Office; Wyman and Sons, Ltd., 1913.) Price 9s.

Part I. of Dr. Goring's work is devoted to an examination of the theories of the late Prof. Cesare Lombroso and his followers. These are shown, we think, quite conclusively to be erroneous. The matter is one eminently suitable for statistical handling. Lombroso stated that criminals are mentally and physically abnormal. A large number of convicts have been examined, and the abnormalities have not been found.

> *No evidence has emerged confirming the existence of a physical criminal type such as Lombroso and his disciples have described . . . there is no such thing as a physical criminal type* (p. 173) . . . there is no such thing as a mental "criminal type" (p. 246).

In chapter i. of part II. we find another statistical summary which must be accepted unless, as is very improbable, it can be shown that the facts are not correctly stated. Convicts as a class are physically and mentally inferior to the general population. They are, on the average, shorter, lighter, and stupider. Thieves, burglars, and incendiaries are especially defective. Criminals convicted of violence or fraud are little, if at all, inferior. A third indisputable statistical fact has emerged from the investigation. It is that the family incidence of crime is not fortuitously distributed, it is not entirely independent of lineage; that criminals do not occur equally in *all* families of the general community, but tend to be restricted to *particular stocks* or sections of the community: to those stocks tainted with criminal ancestry. And we have found that the intensity of this limitation, the intensity of this parental resemblance in criminal propensity, ranges between 0·45 and 0·6 (p. 364).

But the greater portion of part II. consists of debatable matter. Statistics are not merely summarised, they are interpreted. The inferences are not immediate, but mediate. It is probable that the very facts on which Dr. Goring relies would be used by opponents as foundations for quite contradictory conclusions. Facts very similar actually have been so used times without number. For instance, a generation ago the British Association appointed an anthropometric committee to ascertain the statures and weights of persons engaged in different occupations, in accordance with the principle that—

> "The occupation of an individual explains not only the direct effects of physical or mental work on the constitution of the body, but the kind of nurture or sanitary surroundings to which he may have been subjected." The Committee found "the most obvious facts which the figures disclose are the check which growth receives as we descend lower and lower in the social scale."

Dr. Goring's comment is—

> "The figures disclose no such check upon growth as an obvious fact. The facts actually revealed are that, as we descend lower and lower in the social scale, the means of stature and weight diminish in value. There is no evidence that the diminution is caused by a check upon growth due to environmental conditions. An inference from these facts of equal validity with the Committee's deduction would be that descent in the social and economic scales of life is associated with a physical inferiority of human stock; in other words, that the professional man, labourer, and artisan, &c., breed their own kind, who in turn pursue the calling of their fathers, *i.e.* the work most suited to their social station, and to their particular type of physique" (p. 193).

Here we have the old dispute as to whether nature or nurture is the stronger. Dr. Goring sets himself the task of "disentangling the influence of *heredity* from a complication of *environmental* influences" (p. 337).

> "As seen in the above table, 177, the parental correlation for sexual crimes and crimes of wilful damage to property, is from 0·45 to 0·5; for stealing it is from 0·48 to 0·58. We would assume then from this evidence, that the intensity of the inherited factor in criminality is from 0·45 to 0·5, and the intensity of criminal contagion is anything between 0·05 and 0·1" (p. 367). "Our second conclusion, then, is this: that relatively to its origin in the constitution of the malefactor, and especially in his mentally defective constitution, crime is only a trifling extent (if to any) the product of social inequalities, of adverse environment, or of other manifestations of what may be comprehensively termed the force of circumstances" (p. 371).

In these and many other passages, Dr. Goring appears to maintain strongly that the criminal is born, not made; that parentage counts for much, and training for little; that the child of a criminal has, on the average, the "proclivity" or "diathesis" so strongly developed that he will be a criminal no matter what the circumstances in which he is reared. With some surprise, therefore, we read near the end of the work:—

> "But this fact of resemblance does not argue absence of the influence of environment in the development of human beings. It is as absurd to say that, because criminal tendency is heritable, a man's conviction for crime cannot be influenced by education, as it would be to assert that, because mathematical ability is heritable, accomplishment in mathematics is independent of instruction; or that, because stature is heritable, growth is independent of nutriment and exercise. Our correlations tell us that, despite of education, heritable constitutional conditions prevail in the making of criminals; but they contain no pronouncement upon the extent to which the general standard of morality may have been raised by education. We know that to make a law-abiding citizen two things are needed—capacity and training. Within dwells the potentiality for growth; but without stands the natural right of each child born into the world—the right to possess every opportunity of growing to his full height" (p. 373)

This passage is a little vague. Probably instead of "conviction for crime" Dr. Goring means "proclivity for crime," or "chances of conviction for crime." He seems clearly of the opinion that "training" is necessary to make of a normal individual a law-abiding citizen. Presumably such a man may be trained to lawlessness also. He has the capacity for both. In which case the special "proclivity" or "diathesis" of criminals can be nothing more than mere stupidity, mere incapacity to be trained. As expressed by Sir Bryan Donkin:—

> "They are, it seems, innately unable to acquire the complex of characters which are essential to the average man, and, according to their surroundings, they follow the path of least resistance. This path is more often than not, but by no means always, the path of unsocial or criminal action" (p. 7).

In conclusion Dr. Goring states:—

> "Our tables of figures speak for themselves, we have said; but we do not claim that they utter the last word. . . . A long intimacy with the material discussed in the present Report leads us to believe that better material could, with the experience now attained, be procured; but we are convinced that, at least to a first approximation, our data represent the fundamental interrelationships of criminality" (p. 373). In a note he adds:—"The inquiry, which of all others is most urgently needed, must not be limited to an examination of prisoners and their official records; but must extend beyond the prison walls, and into the homes and haunts of the offenders when at large; and into that wide and most interesting field of research where the experiments of the modern reformatory system are dealing with the child-criminal of the race" (p. 373).

SIR JOHN MURRAY, K.C.B., F.R.S.

THE tragic accident by which Sir John Murray lost his life on March 16 has deprived the world of one of the foremost naturalists of the day, and has sent a thrill of sorrow through the hearts of all who knew him. Though he had passed the allotted span of threescore years and ten, he still so abounded in youthful spirits and enthusiasm, was so active alike in body and mind, so full of work and of plans for further enterprise, that it is hard to believe that a career so distinguished in its past and bearing such continued promise for the future, has been suddenly brought to a close.

Of Scottish parentage, he was born in Canada in 1841, and received there the early part of his education. But in his youth he came to Edinburgh, and at the University there, under J. H. Balfour, P. G. Tait, G. J. Allman, and A. C. Brown, he received the training in physical and natural science that formed the groundwork of his lifelong labours. He soon showed the bent of his disposition towards marine studies, and at the same time his love of personal adventure, by taking, in the year 1868, a voyage in a Peterhead whaler to Spitsbergen and the Arctic seas. In the same year there began that series of pioneering cruises in the *Lightning* and *Porcupine*, by which, during the summers of 1868, 1869, and 1870, Wyville Thomson and W. B. Carpenter obtained so much new information regarding the distribution of life in the ocean. Deep-sea exploration became then a leading preoccupation among the naturalists of this country.

Eventually the general interest in this subject found vent in an application to the Government for a vessel and funds to prosecute the study of the ocean all over the globe. The memorable expedition of the *Challenger* was accordingly organised, which lasted from 1873 to 1876. Wyville Thomson, who had been elected in 1870 to the Chair of Natural History in the University of Edinburgh, was appointed director of the civilian scientific staff of the expedition. Recognising the brilliant promise of John Murray, he chose him to be one of the three naturalists on his staff. To this momentous choice the young aspirant to scientific distinction owed the opening which led to all the varied labours which have made his name so widely known.

When Wyville Thomson died in 1882, Murray, who had proved his remarkable qualities during the course of the expedition, was charged with the editorship of the scientific results of the cruises of the *Challenger*. This was a task the greatness of which is probably not generally appreciated. No ordinary skill, knowledge, tact, and patience were required to allocate the vast pile of collections to the different specialists all over the globe, to keep these writers up to their engagements, and, within reasonable limits of time, to see that the printers and engravers were supplied with material, to supervise the masses of proof-sheets, and, by no means least of all, to battle with an unsympathetic Treasury that grudged the heavy expense necessarily required for the publication of the work of the most completely organised expedition that had ever sailed the seas. Year after year the labours of the editor went on, until some fifty massive quarto volumes were issued. That Murray should have emerged with triumphant success from so prolonged and so trying an ordeal was a striking proof of the strength of his character and the vigour of his scientific enthusiasm.

Besides taking an active part in the dredging and the general biological work of the expedition, Murray specially devoted his attention to the working out of certain parts of the materials obtained. He was more particularly interested in the investigation of the deposits that are accumulating on the floor of the ocean. The ample store of materials which he succeeded in gathering together was subsequently carefully studied by him in concert with the late Prof. Renard, of the University of Ghent, and the conjoint work of the two observers was published as one of the thick quartos of the *Challenger* Reports. This monumental volume possesses a high scientific value, coupled with the historical interest that it gave to the world the first detailed revelation of the nature and distribution of the deposits that are gathering on the floor of the deep sea, and the impressively slow rate at which some of these deposits are being formed.

A further inquiry arising out of the operations of the *Challenger* expedition was the question of the origin of coral islands. The fascinating explanation of these islands proposed by Darwin had been generally accepted by men of science, though